



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,157	06/16/2006	Viktor Menart	33581-US-PCT	5099

72554 7590 08/19/2008
SANDOZ INC
506 CARNEFIE CENTER
PRINCETON, NJ 08540

EXAMINER

WOODWARD, CHERIE MICHELLE

ART UNIT	PAPER NUMBER
----------	--------------

1647

MAIL DATE	DELIVERY MODE
-----------	---------------

08/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,157	Applicant(s) MENART ET AL.	
	Examiner CHERIE M. WOODWARD	Art Unit 1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/16/06</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1647

DETAILED ACTION

1. Applicant's election of Group I (claims 1-12) in the reply filed on 2 May 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The election of species requirement drawn to a species of NDSB is WITHDRAWN in view of the art rejections set forth below.

Formal Matters

Claim 13 has been cancelled. Claims 14-16 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Claims 1-12 are under examination as they are drawn to the species of G-CSF.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 6/16/2006 has been considered by the examiner. A signed copy is attached hereto.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 5, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazawa et al (US Patent 5,500,416, 19 March 1996) (cited in Applicant's IDS of 6/16/2006).

Miyazawa et al., teach compositions and methods of making compositions comprising active pharmaceutical ingredients, including pharmaceutically acceptable excipients, and a non-detergent sulfobetaine (NDSB) (column 2, lines 61 to column 3, line 32; column 5, line 47 to column 7, line 58) (see also claims 1, 6, 7, and 8) (compare instant claims 1, 2, 5, 10, and 12). Examples of various NDSBs are taught at column 3, lines 22-32; column 4, lines 32-46; and claims 7 and 9.

Art Unit: 1647

5. Claims 1-6 and 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Menart et al., WO 2004/015124 (published 19 February 2004, priority to 11 June 2003; published in English and designating the US).

The '124 publication teaches compositions and methods of making compositions comprising human G-CSF (hG-CSF) (page 1, second and last paragraphs) wherein the solubilization of microbial inclusion bodies containing G-CSF is taught by mixing Zwittergents, including different non-detergent sulfobetains (NDSB) and dimethylsulfoxide (DMSO) (page 15, second paragraph) (see also Examples 10 and 11, pages 33-34; and claims 1-3, 26, 27, 29, and 37) (compare instant claims 1-5 and 10-12). NDSB 195, NDSB 201, NDSB 211, and NDSB 256 are species of NDSB used in Example 10 (page 33) (see the instant specification on page 4, last paragraph, for comparison of NDSB numbers with the list of species set forth in claim 6) (compare instant claims 5 and 6). The composition including polyols, and glycerol is taught at page 14, third paragraph (compare instant claims 8 and 9).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

Art Unit: 1647

owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 7 is rejected in addition to claims 1-6 and 8-12 under 35 U.S.C. 103(a) as being unpatentable over Menart et al., WO 2004/015124 (published 19 February 2004, priority to 11 June 2003; published in English and designating the US) and Vuillard et al., (Biochem J. 1995;305:337-343).

The Examiner finds the following facts:

- a. The instant claims are drawn to a genus pharmaceutical compositions comprising an active pharmaceutical ingredient and a non-detergent sulfobetaine (NDSB) and a method of making the composition.
- b. The '124 publication teaches compositions and methods of making compositions comprising human G-CSF (hG-CSF) (page 1, second and last paragraphs) wherein the solubilization of microbial inclusion bodies containing G-CSF is taught by mixing Zwittergents, including different non-detergent sulfobetaines (NDSB) and dimethylsulfoxide (DMSO) (page 15, second paragraph) (see also Examples 10 and 11, pages 33-34; and claims 1-3, 26, 27, 29, and 37) (compare instant claims 1-5 and 10-12). NDSB 195, NDSB 201, NDSB 211, and NDSB 256 are species of NDSB used in Example 10 (page 33) (see the instant specification on page 4, last paragraph, for comparison of NDSB numbers with the list of species set forth in claim 6) (compare instant claims 5 and 6).
- c. The '124 publication does not teach NDSB221 or NDSB222t.
- d. Vuillard et al., teach non-detergent sulphobetaines as mild solublizing agents for protein purification (abstract). Vuillard et al., teach NDSB 221 at Figure 1 (see the instant specification on page 4, last paragraph, for comparison of NDSB numbers with the list of species set forth in claim 6). Vuillard et al., also teach NDSB195, NDSB201, NDSB209, NDSB211, NDSB223, NDSB225, and NDSB249 as mild solubilizing agents for protein purification (Figure 1). However, Viullard et al., do not teach NDSB222t (dimethyl-t-butyl-(3-sulphopropyl) ammonium salt (compare instant claims 6 and 7).
- e. It would have been obvious to try NDSB222t as a solublizing agent for protein purification in light of the prior art which teaches that numerous NDSBs, including seven taught

Art Unit: 1647

by Vuillard et al., and four taught by the '124 publication (only three of which overlap with the species of NDSB taught by Vuillard et al.).

f. At the time of the instant invention there was a recognized problem in the art including a design need or market pressure to solve a problem. Numerous species of NDSBs were known in the art as solublizing agents for protein purification. The process of purifying G-CSF from the inclusion bodies of *E. coli* cells using various NDSBs was old and well-known, as evidenced by the '124 publication. There is an ongoing need in the art to provide stabilized pharmaceutical compositions.

g. A finite number of identified, predictable potential solutions to the recognized need for mild solubilizing agents for protein purification, as evidenced by the seven species of NDSB taught by Vuillard and the four species of NDSB taught by the '124 publication.

h. One of ordinary skill in the art could have pursued the known potential solutions, including use of other formulaic structures of NDSBs, such as NDSB222t, with a reasonable expectation of success. This is evidenced by the seven species of NDSB taught by Vuillard and the four species of NDSB taught by the '124 publication that were previously successfully used to solubilize inclusion bodies in protein purification processes, including the processing of G-CSF.

A person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance, the fact that a combination was obvious to try might show that it was obvious under 35 USC 103.

In view of the facts recited above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to simply substitute one known element for another to obtain predictable results. The '124 publication teaches compositions and methods of making compositions comprising human G-CSF (hG-CSF) wherein the solubilization of microbial inclusion bodies containing G-CSF is taught by mixing Zwittergents, including different non-detergent sulfobetains, such as NDSB195, NDSB201, NDSB211, and NDSB256. The '124 publication does not teach NDSB221 or NDSB222t. Vuillard et al., teach non-detergent sulphobetaines as mild solublizing agents for protein purification, including the species of NDSB195, NDSB201, NDSB209, NDSB211, NDSB221, NDSB223, NDSB225, and NDSB249. However, Viuillard et al., do not teach NDSB222t (dimethyl-t-butyl-(3-sulphopropyl) ammonium salt. It would have been obvious to try NDSB222t as a solublizing agent for protein purification in light of the prior art which teaches that numerous NDSBs, including

Art Unit: 1647

seven taught by Vuillard et al., and four taught by the '124 publication (only three of which overlap with the species of NDSB taught by Vuillard et al.). At the time of the instant invention there was a recognized problem in the art including a design need or market pressure to solve a problem. Numerous species of NDSBs were known in the art as solubilizing agents for protein purification. The process of purifying G-CSF from the inclusion bodies of *E. coli* cells using various NDSBs was old and well-known, as evidenced by the '124 publication. There is an ongoing need in the art to provide stabilized pharmaceutical compositions. A finite number of identified, predictable potential solutions to the recognized need for mild solubilizing agents for protein purification, as evidenced by the seven species of NDSB taught by Vuillard and the four species of NDSB taught by the '124 publication. One of ordinary skill in the art could have pursued the known potential solutions, including use of other formulaic structures of NDSBs, such as NDSB222t, with a reasonable expectation of success. This is evidenced by the seven species of NDSB taught by Vuillard and the four species of NDSB taught by the '124 publication that were previously successfully used to solubilize inclusion bodies in protein purification processes, including the processing of G-CSF.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Provisional Obviousness-Type Double Patenting Rejection

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided

Art Unit: 1647

the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-4 and 8-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 8, and 9 of copending Application No. 10/577,285. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are drawn to the same or overlapping subject matter. Claims 1, 3, 8, and 9 of the '285 application read on instant claims 1-4 and 8-10. Although claim 1 of the '285 application recites a limitation that the composition be free of a surfactant, the non-detergent sulfobetaine (NDSB) of the instant claims would not act as a surfactant. The instant specification states that NDSBs are different than surfactants used in other methods to purify proteins such as G-CSF (page 2, first full paragraph). NDSBs instead act as mild solubilizers (page 2, first full paragraph). Additionally, both claim 1 of the instant application and claim 1 of the '285 application use the transitional phrase "comprising." As such, the claims are read as comprising other components.

Applicant is reminded that MPEP § 804 (II) states, "When considering whether the invention defined in a claim of an application would have been an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art. *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1279, 23 USPQ2d 1839, 1846 (Fed. Cir. 1992). This does not mean that one is precluded from all use of the patent disclosure." (Emphasis added). "Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in the application defines an obvious variation of an invention claimed in the patent. *In re Vogel*, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970)."

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Claim 12 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-7, and 26 of copending Application No. 10/522,826. Although the conflicting claims are not identical, they are not patentably distinct from each other because

Art Unit: 1647

the claims are drawn to the same or overlapping subject matter. Claims 1, 3-7, and 26 of the '826 application read on instant claim 12, which is drawn to a process for making a pharmaceutical composition of claim 1 (comprising an active pharmaceutical ingredient and a NDSB), prepared by mixing a NDSB with [a] therapeutically effective amount of an active pharmaceutical ingredient. Claims 1 and 26 of the '826 application sets out specific steps for the method of instant claim 12, including the mixing of a NDSB.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

NO CLAIM IS ALLOWED.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHERIE M. WOODWARD whose telephone number is (571)272-3329. The examiner can normally be reached on Monday - Friday 9:00am-5:30pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath N. Rao can be reached on (571) 272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cherie M. Woodward/
Examiner, Art Unit 1647